EPISODE 68:
Listener Questions and Re-Framing Risk

[INTRODUCTION]

[0:00:05.3] Benjamin Felix: This is the Rational Reminder Podcast, a weekly reality check on sensible investing and financial decision making for Canadians. We are hosted by me, Benjamin Felix and Cameron Passmore. Bit of a long episode today, just Cameron and I chatting too, so sorry about the length.

[0:00:18.2] Cameron Passmore: We debated the length and sometimes it feels bad when we go too long, I don't know.

[0:00:23.8] BF: I always say to you, Cameron, though, that we've never once gotten the feedback that the episodes are too long.

[0:00:28.4] CP: No, if you have that feedback, we would love to hear it because we don't have the data, we'd love to know. Some people will say should be the length of the average commute which I don't know, 20 to 40 minutes depending where you live.

[0:00:38.3] BF: Split a long episode between two –

[0:00:40.4] CP: Talk to people in New York they say, I spend an hour and a half on the trains, we love the length. I don't know.

[0:00:44.2] BF: Anyway, the episode's long, we'll keep the intro short but that's it, we hope you enjoy it.

[0:00:47.9] CP: It's a risk. A lot of risk talking about today, it's long and about risk. Take it as you will. Anyways, have a listen.

[EPISODE]

[0:00:58.4] BF: Welcome to Episode 68 of the Rational Reminder Podcast. We switched out one of our current topics that we usually go through for a couple of listener questions, we've had, really good listener questions.

[0:01:09.2] CP: Love getting them.

[0:01:11.1] BF: Yeah.

[0:01:10.4] CP: Best place to do that is on the comments I guess on the Rational Reminder website.

[0:01:14.8] BF: Yeah, I'd prefer that because other people can see them but these ones actually came through by email which is also fine.

[0:01:22.2] BF: Jump into the questions?

[0:01:22.7] CP: Sure, question one. When deciding asset allocation in a portfolio, the equity bond ratio is often discussed as a variable to adjust for risk tolerance. If an investor has decided on an 80/20 ratio, 80 stocks, 20 bonds, should they reconsider this ratio if they start tilting based on factors?

[0:01:41.6] BF: Yeah, that's a great question. Actually, this wasn't in my notes to talk about but I just realized it's interesting. I just finished writing a new paper on asset location, which is going to come out hopefully in the next few weeks but I found an academic paper that looks at asset location from — instead of controlling for the mix between stocks and bonds to optimize asset location, they control for utility.

Which is not the easiest term to understand in the context of asset location. But it's similar when we were talking more with the factors. It's like, if you have a target mixed between stocks and bonds, if you start substituting in stocks with different risk return characteristics, maybe just the equity bond mix doesn't actually make sense. Maybe you should be targeting a level of utility but how do you measure that?

[0:02:22.6] CP: Level of utility which is unit of return per unit of risk perhaps. What do you want to control for? Risk or return?

[0:02:30.3] BF: Yeah, that's kind of the question, I think. Anyways, The question is a good one but when you start adding in factors, yes, it does change the risk return characteristics of the equity portion of your portfolio. Now, within the question that this listener asked, I think they were thinking from the perspective of by adding in factors, you're making your equities riskier.

[0:02:48.7] CP: For sure that's what they meant.

[0:02:50.2] BF: Yeah, that's not what's happening.

[0:02:50.2] CP: Am I taking on more risk than I should be.

[0:02:54.0] BF: Exactly.

[0:02:55.9] CP: Unexpected risk but that's not what happens when you melt these all together inside a portfolio.

[0:02:59.1] BF: I've had this question asked different ways on a bunch of different occasions but just because the factors like adding in additional small cap or value, just because they're independent risks, well no — because they're independent risks, you're not increasing the absolute level of risk in your portfolio.

[0:03:13.7] CP: Because they behave differently the same time as other factors and it's this combination combined with rebalancing as they do move around, that smoothens the ride, reduces volatility but increases expected returns.

[0:03:26.8] BF: Exactly. It's kind of like saying, if I added international stocks to my Canadian equity portfolio, is that increasing my absolute level of risk? No. You're adding in additional risky assets but that's not making a portfolio riskier, it's making it safer.

[0:03:41.5] CP: You can actually build your portfolio to target a level of volatility and then take as little equity exposure as possible.

[0:03:50.1] BF: Yeah.

[0:03:51.3] CP: You go the other way.

[0:03:52.4] BF: This is kind of that target utility discussion that we're talking about, our target risk return as supposed to just why would you focus on the mix between stocks and bonds when you can add in riskier stocks to get the same risk-return characteristics with less overall equity exposure?

[0:04:07.7] CP: I can remember Larry Swedroe many years ago when he presented to clients of ours talking about how he had chosen to get the maximum amount in fixed income, given a return profile he wanted. He actually bar-belled a portfolio with I think 60% bonds on one side and 40% equities but it was only factors on the equity side.

[0:04:29.5] BF: Small cap value, I think.

[0:04:31.1] CP: Small cap value.

[0:04:31.5] BF: you load up on some small value with a higher risk adjusted returns, reduce your overall equity exposure. I wouldn't do it, though.

[0:04:37.6] CP: In the risk is how you're going to behave because you are going to have massive tracking error.

[0:04:40.7] BF: Massive tracking error.

[0:04:42.4] CP: You have to be committed. Now, he can pull it off, he knows what he's doing.

[0:04:45.7] BF: Yeah. Big bet on small values, I mean, that's scary too. We don't do all small cap value portfolios, even if that would be rational because of the two things we just talked about, because of the

tracking error and because going all in on one factor is scary. I guess that's going all in on a couple of factors if you're small value.

[0:05:02.4] CP: That's just it, right? This is an extreme situation. If you went all equity just in small value for getting bonds, that would be –

[0:05:08.8] BF: You know, it's tricky too, thinking about when you target a factor exposure in terms of the regression coefficients, if you go all small value, you're going to have strong exposure to small in value and the size in value factors. Relative price. But market-wide value and small value can have materially different performance characteristics over a different period of time.

Even though you might have strong regression coefficient exposure, like from that perspective by going all small cap value, you're still missing out on the potentially high returns of market wide value by doing that.

[0:05:38.1] CP: Exactly.

[0:05:38.8] BF: That's one of the other risks. Anyway, down to the question. Sure, if you start adding in factors that might affect the risk profile of equities and maybe there is some consideration for changing your mix between stocks and bonds from that perspective but it's not super easy to think about.

[0:05:55.2] CP: If you have a strategic allocation to these factors and stick to the rules and rebalance, high expected return, lower expected volatility.

[0:06:02.4] BF: Question number two?

[0:06:04.3] CP: "I am slowly making the shift to index investing but I have a concentrated portfolio of individual stocks with significant capital gains. Is there a rational reason to keep the individual's stocks long term to avoid realizing those gains?"

[0:06:17.9] BF: Yeah. I mean, it's a tax question. In this situation, the securities were sort of gifted throughout early adult life by a parent so there's like really big capital gains in the portfolio, obviously selling any position is going to result in a big capital gain.

[0:06:34.9] CP: Is it a tax question? Given the idiosyncratic risk of individual securities?

[0:06:38.2] BF: You're right.

[0:06:39.2] CP: You could wipe out that gain in no time for something completely unforeseen.

[0:06:42.1] BF: You're right, it's not just a tax question.

[0:06:45.8] CP: I mean, again, we'll go back in time but I'm never talking to people that had Nortel shares at over 120 bucks a share. My god, I can't sell because the tax will kill me. Well, the implosion of the stock, pretty much made that debate moot, we used to show people, it goes to $90, your whole tax — I know we went back in history but it's just a great illustration.

Yeah, the stock price drops to $90, your tax debate is moot and is there a chance of this stock was 90 bucks. We know how that played out, we knew how it played out but at the time, yeah. It could go to 150.

[0:07:18.0] BF: Yes, it could.

[0:07:19.1] CP: Yes it is tax and yes, you could end up depending on your age, getting into OES club and what not but boy, the idiosyncratic risk and wipe out can tax debate so fast.

[0:07:29.4] BF: Yeah, I think thinking about the tax cost, you can't just think about what is today's tax bill going to look like. Because you've also got a thing about, this is just on the tax perspective of this question. You're going to pay an absolute amount of tax in the year that you sell, if you sell these individual securities and incur the big capital gain.

But you can't just look at that number and evaluating what is the tax impact because you would have paid that tax in the future, so you're really looking at what is the difference between the present value of paying this tax in the future and the cost of paying it today. That difference is kind of the hit you're taking.

[0:08:01.0] CP: Plus, the compounding I guess on that. Money that would have been paid in tax. Present investor, right?

[0:08:07.2] BF: Present value, right? Discounted back at your expected return. That gives you the opportunity cost. That delta between what would you have gained by paying the tax later versus what are you paying now? But it's not like you're paying taxes that you would have never paid, you're just paying taxes earlier than you would have otherwise, by selling the securities.

Now, I think just in evaluating what is the total tax cost, I think that's really important to think about. It's what am I paying today versus what is the present value of what I would pay in tax —

[0:08:32.5] CP: Right.

[0:08:34.1] BF: — in the future.

[0:08:34.7] CP: But certainly by diversifying, you're going to increase your reliability of outcomes the expected outcome.

[0:08:39.0] BF: Absolutely.

[0:08:39.6] CP: That's rational. Now, the irrational answer would be, "Yeah, but I love these stocks." And you know, we all know a lot of people love individual stock choices they've had, especially with large gains.

[0:08:49.1] BF: For sure. But I love the data from this paper that just came out on, the global stocks outperform treasury bills and I think we've mentioned this data point a few times.

[0:08:56.6] CP: It's like our favorite data point, I love it.

[0:08:58.9] BF: From 1990 to 2018, 1.3% of the stocks in the global market explained all of the wealth creation in excessive T-bills.

[0:09:05.8] CP: That's for 28 years. 1.3% of the stocks.

[0:09:10.2] BF: It's crazy. So over that same time period, 56% of US stocks and 61% of non-US stocks, underperformed T-Bills.

[0:09:18.9] CP: Gosh.

[0:09:20.9] BF: Even with – say half of stocks, underperform T-bills, half outperform T-bills but to get the gain, you had to have those 1.3%.

[0:09:29.2] CP: Right. Now, an active manager would say well, I just want to avoid those under performers, those 56% performers. I guess you get, made the argument.

[0:09:38.1] BF: Good luck. I wish you luck in your endeavors. Active manager. Yeah, you mentioned increasing the reliability of the outcome and based on that data point that we just mentioned, I don't think that the reliability point can be overstated like if you hold say 50 stocks in your individual security portfolio, you've got a pretty good chance. In the study that we're talking about there were $61,100 stocks, in the study. If you're holding 50, the chances of your 50 being the 1.3% that drove the returns are pretty low.

[0:10:08.8] CP: The other thing I would look at too which we've done with a lot of clients is take a goals based approach so look at, if you did sell and get a more diversified, more reliable portfolio instead of that single stock, is it a more reliable — where you met your goals in that decision?

[0:10:24.2] BF: Right, when we're talking about reliability, one of the most interesting ways to think about it. I mean, all reliability means is decreasing the dispersion of outcomes, we're talking about when we say that reliability. Vanguard did a paper in 2012, they were looking at active share which is like,

when active managers are extremely active, they're extremely different from the index and the portfolio that they're holding, does that add value?

That's what they're looking in, this paper that I'm about to mention. But one of the things that they found is that the higher active share funds, they didn't necessarily do better, this is like more concentrated funds that are extremely different from the index. They didn't necessarily do better, they didn't do better on average but they had a much wider dispersion of outcomes.

It kind of related back to what you're saying, Cameron, about loving the stock. You might own a stock that's done really well and yes, that can happen. When you have a wide dispersion of outcomes, that dispersion can land on the plus or the minus relative to –

[0:11:14.8] CP: Outcome from a less great decision.

[0:11:17.7] BF: That's absolutely true.

[0:11:18.6] CP: But then that skews your behavior because it breeds overconfidence.

[0:11:21.5] BF: For sure. Dispersion can give you a good outcome, it doesn't mean that you made a good decision by having a concentrated portfolio.

Anyway, my opinion on this is if you have this concentrated portfolio of individual stocks and you've made the decision to transition to index funds because you don't want to be an individual security investor. Even if there's a big tax bill, in general, it's probably pretty sensible to, at least over time shift toward index funds. If not, ripping of the Band-Aid in a single year depending on the tax situation.

[0:11:46.0] CP: That would be our rational answer to that question. Current topic number one. You picked of this story in the Economist last week which kind of follows the Michael Burry question that is still coming up in your comments, on your YouTube channel.

[0:11:59.3] BF: Yeah. Well, you hit the nail on the head last time we talked about this is that people are saying like finally, "I knew something was wrong with index funds like got you now." It's exactly that.

[0:12:08.5] CP: Yup.

[0:12:09.0] BF: I do think it's interesting that Michael Burry has credibility because he shouldn't but he does because he was in a movie, I think.

[0:12:15.4] CP: That might be a little edgy but –

[0:12:16.9] BF: Is it?

[0:12:17.9] CP: Well, was it luck or was it skill?

[0:12:20.1] BF: That's exactly right. I love what Barry Ritholtz said when he was on our podcast a while ago. He called the bottom of the crash but he doesn't believe that he can do it again.

[0:12:28.7] CP: Yeah, didn't hurt his career now did it?

[0:12:31.6] BF: No, it didn't hurt his career. In this Economist article, they're talking about index ownership of the market but they're also talking about quant of the market, what really attracted me to the article is they had a breakdown of asset ownership. I just did a video on the Michael Burry thing basically, on how much the index funds affect prices and the data that I found was not as recent as this.

They had ay from now. From 2018 or even 19. For like ownership of assets. They showed that the total US market based on the Russel 3000 is about 31 trillion in market cap.

[0:13:04.4] CP: That's 3,000 largest publicly traded companies in the US which is the vast majority of the market cap.

[0:13:10.8] BF: Index funds ETF's and Quant funds own about 35% of that. Traditional hedge funds and mutual funds own about 24% and the remainder is held directly by companies, governments, insurance companies and foreigners. That 35% owned by index funds and quant funds is kind of the number that

they're keying in on in the article. That's 31 trillion is larger than the us stock market of another try to financials that the global value of stocks is around 75 trillion.

[0:13:40.9] CP: We know from like the studies that I decided in my video on, the index fund bubble idea. Indexing in the US is way stronger than indexing globally. By far. If we say the US market's 31 trillion, global market's 75 trillion, even if indexing is not 35% of the US market, indexing and quant and ETF's, whether they're index or not, make up 35% of the US market and then relative to the global market of 75 trillion, that number is even smaller.

[0:14:09.2] CP: So this is ownership you're talking about and regular listeners know a few weeks ago we talked about. Ownership does not translate into trading activity.

[0:14:16.0] BF: That's right.

[0:14:16.9] CP: Trading activity for index funds is way lower than their percentage of the market cap.

[0:14:21.0] BF: That's right. Anyway, this Economist article, opposite of Michael Burry who was saying that this is causing the markets to be inefficient, the Economist article is actually saying, this is most of the quant ownership and is making the markets extremely efficient.

[0:14:35.2] CP: Quant basically means, it being run by computers and algorithms as supposed to predictive models run and decided by humans.

[0:14:42.7] BF: That's right. They're talking about machine learning and artificial intelligence and they try to draw an analogy and then they shut down their own analogy but I'll talk about what I mean. They use chess and they talk about Google's AlphaZero which as I understand from the article is a machine learning device that was given the rules of chess and then taught itself how to play.

[0:15:04.8] CP: Crazy.

[0:15:05.0] BF: It is crazy. But the interesting thing is that, AlphaZero was able to beat Stockfish, Stockfish is another artificial intelligence machine but instead of being fed the rules and teaching itself

how to play, Stockfish was fed all of the possible moves by humans. Really smart humans told Stockfish how to play, AlphaZero was given the rules and taught itself how to play. AlphaZero was able to beat Stockfish.

[0:15:28.1] CP: Wow.

[0:15:28.7] BF: It is cool. In this article, they're talking about how that type of machine thinking — and they talk about factor investing quite a bit in this article but they're suggesting that it's possible that a machine, that does not think like a human and has none of the biases or preconceived notions that a human would, might be able to find factors that a human never could.

[0:15:48.8] CP: Yup, and could learn to beat the human decided factors even if it's being run in a quant type model.

[0:15:54.7] BF: Right. Then they quote Ray Dalio a few times in this article and Dalio, I agree with what he says, he says chess has a fixed set of rules but the stock market is a complex adaptive system. So machine learning, it doesn't help you in a complex adaptive system. What did Dalia say? "A machine learning strategy is bound to blow up eventually if it's not accompanied by deep understanding."

They also talked to – well they quoted, I don't know if they talked to them. A guy named Bryan Kelly who is at Yale and he's also AQR's Head of Machine Learning. He said that they have discovered machine derived factors like what we're talking about. So a machine that taught itself how to find factors and then found factors and he said that even though they look good in the data, they've almost always been spurious.

[0:16:37.3] CP: This is what we talked about at length which is factors have to have some sort of reasonable, rational economic underpinning.

[0:16:44.2] BF: Yeah, Brian Kelly, the AQR machine learning guy said, "Combining machine learning with economic theory works better." Which is exactly what you just talked about. One of my favorite parts about this article was that they had Ray Dalio, who is being quoted extensively. Whenever I think about

Ray Dalio, I saw, I can't remember where I saw it, it's probably well-known quote but it was like, "Every success story should come with a disclaimer about survivorship bias."

Whenever I think about Dalio, as smart as he is and as renowned as he is, it's like, you got to think about survivorship bias. In this story, they quote Dalio extensively, as if he's like the ultimate source on whatever and maybe he is.

[0:17:19.9] CP: He runs the largest hedge fund in the world, right?

[0:17:21.7] BF: Yeah, which for sure gives him credibility and he's seen some stuff and he's smart, all more reasons to make him credible, even if it is luck. I'm not saying it is.

They had all these quotes from Dalia but then they also in the article, quote a guy named Philippe Jabre who I'd never heard of. Maybe I'd never heard of him because it's fun and didn't do well. He launched Jabre Capital in 2007 and he's shutting the fund down now. He's complaining in the article saying that all these machines are making it impossible for humans to do a good job but I just thought, the contrast, it's like, either end of survivorship bias, Dalio talking confidently about how to approach the market and then this other guy saying –

[0:18:01.2] CP: How do you blame the machines for causing you to do a bad job?

[0:18:04.8] BF: I don't know.

[0:18:05.8] CP: Okay.

[0:18:06.3] BF: Got to justify it somehow, I guess.

[0:18:07.6] CP: Next topic? It's portfolio topic, going to call it 'Risk 101.'

[0:18:13.3] BF: Yeah, I just thought it would be interesting to go through some of the basics of the different types of risks that each and every one, I think we're going to get a chance here to reframe what risk is. A lot of people I think just think their risk is losing all my money.

Because when you dig in with people, portfolio going down, well that's not really risk. I'm worried about just complete capital vaporization, the Bernie Madoff type scenario.

[0:18:36.6] CP: Yeah.

[0:18:37.8] BF: I think that we'll get into the planning topic after this obviously but the planning topic we talk about annuities which encompasses another type of risk which is longevity. But other than that, we're talking about investing. I think the big ones are total loss, like you were just saying, volatility, uncompensated risk, skewness and inflation. I thought It'd just be interesting to talk through each of those, total loss like you said.

[0:19:02.0] CP: Pretty obvious.

[0:19:02.8] BF: You can lose all your money if you buy one stock, that can happen. Nortel, you gave the example earlier, total loss is pretty easy to diversify away, like if you own a globally diversified portfolio of index funds, total loss starts to become –

[0:19:18.6] CP: Well, if there is total loss, you got much bigger problems than your portfolio.

[0:19:21.0] BF: Yeah.

[0:19:22.9] CP: You work for government because there's no – that's revenue based to pay for your job. You and I would go before the government workers I guess but –

[0:19:30.5] BF: Yeah, maybe not long before, though.

[0:19:31.5] CP: No, maybe not long before but –

[0:19:34.8] BF: If VT, Vanguard Global Stock Index, if that goes to zero, that's the current economic system is by definition vaporized.

[0:19:45.6] CP: I'm not even sure this podcast would survive that.

[0:19:47.4] BF: I don't know about that.

[0:19:49.7] CP: Maybe all we have left to do is our little podcast.

[0:19:52.0] BF: Okay, total loss, you can diversify that away.

[0:19:54.4] CP: Okay, let's go to the next one, volatility which is a variability of price.

[0:19:58.2] BF: I think volatility can be a risk but it depends on the situation, like a real risk. There are two situations where volatility is a real risk. One is when you need the money soon. If you're investing in stocks, and you need the money next week, there's a very good chance stocks are down next week, that's a real risk. Then the other time volatility's a real risk is behaviorally.

[0:20:16.9] CP: Exactly. If you're throwing up because your portfolio's down 50%.

[0:20:20.7] BF: That's a real risk, you don't want that.

[0:20:22.7] CP: Correct, you always have to know when you build a portfolio, what the potential outcomes are, so that you don't end up in over your head and don't let recency drive that asset mix, you have to know what can happen.

[0:20:33.0] BF: But other than those two scenarios, when you need the money soon and if you're going to throw up whne your portfolio is down 50% or feel sad or however you want to describe it, barring those two cases, I don't think volatility is a real risk.

[0:20:44.9] CP: Absolutely not.

[0:20:45.8] BF: I think it's actually a really bad measure for risk. Fama and French did a paper last year called volatility lessons in the financial analyst journal and they took a really interesting approach to

thinking about volatility. They used historical stock market data to build a bootstrap model and they ran 100,000 simulated time periods of various lengths to look at the impact of volatility on the outcome.

[0:21:11.2] CP: So cool.

[0:21:12.7] BF: It is so cool. For the equity premium, that's stock outperforming risk free assets.

[0:21:17.3] CP: T-bills.

[0:21:18.2] BF: T-bills, yeah. They found that over one year periods, this is just relating that volatility back to being a real risk, over one year periods, they found there's a 36% chance or in their simulated trials, there was a 36% chance of stocks making you worse off than investing in risk-free investments.

[0:21:34.1] CP: Isn't that amazing? A third of the time, you're expected in stock to be less in a portfolio a year from now than now. So many people look to active managers to ensure that doesn't happen.

[0:21:44.2] BF: Yeah.

[0:21:44.8] CP: Isn't it liberating, you think back to Dave [inaudible], you know this going in so it's down a year.

[0:21:49.7] BF: It is what it is.

[0:21:50.5] CP: It's not unexpected.

[0:21:52.6] BF: That's the thing is it ties it back to when is volatility a real risk. Maybe when you don't expect it. Maybe it's a real risk.

[0:21:55.2] CP: The longer time period.

[0:21:59.7] BF: Yeah, I'll just mention that that 36% in the simulated trials is about the same as what we've actually seen historically which is just an interesting point. But Fama and French, what their paper

did that was really interesting is that because they were doing bootstrap simulation, they were able to look at 100,000, 30 year simulated periods. We don't have 100,000 real, 30 year historical periods to look at. They found even over that longer timeframe, there's still a 4.08% chance of a negative equity premium.

[0:22:30.5] CP: Still giving a positive return depending on what the risk free is. It's the delta to the risk free rate.

[0:22:35.2] BF: Right. The point is, in 4.08% of cases, you would have been better off not taking any risk.

[0:22:40.5] CP: Yeah, you can hear, "I should have invested in GIC's the past 30 years." Yes, there is a chance of that. Otherwise, it would not be a risk premium.

[0:22:47.8] BF: Yeah, but it is crazy to think about, now in the Fama French paper, they also looked at the value premium and the small value premium so stocks, underperforming risk free assets, 4.08% chance. A negative premium for the market wide value so value stock across the market, over the market. There was a 0.96% chance of underperformance over 30 years in the bootstrap and with small value stocks, it was a 0.17% chance of underperformance over 30 years.

[0:23:17.8] CP: Which is less than the market.

[0:23:19.4] BF: Yeah. Exactly.

[0:23:21.5] CP: How can you ignore those factors in a portfolio?

[0:23:23.4] BF: Yeah, I know. That's the whole point about factor diversification but this long term data on the chance of a negative premium, it's just another interesting perspective to think about that. I think what we can take away from that thought is that volatility, even over the long term, even if it is less of a risk, but even over the long term, there is a chance of volatility results in a negative risk premium.

[0:23:44.1] CP: For sure.

[0:23:45.3] BF: But over longer periods of time, the chance of that happening is much less. Adding in additional risks like we always talk bout decreases that chance which is just classic diversification.

One thing that the Fama French paper intentionally leaves out because they believe it always should be left out, is any autocorrelation in stock returns. So because they use bootstrap, any relationship between yesterday's return and today's return is eliminated by nature of the way that they're assimilating the return periods. In real life, there is some evidence of autocorrelation. So some evidence of mean reversion.

[0:24:19.3] CP: And we have talked about that in the past too.

[0:24:20.8] BF: But it is probably not reliable enough to – we talked about the safe saving rate while ago, which we thought was pretty cool but then we realize that you can't really rely on past mean reversion to repeat. So anyway, just an interesting note that in the Fama French long-term 30 year there is a chance of negative returns, historically that's been less true because of mean reversion but we can't really bet on mean reversion repeating itself.

[0:24:42.8] CP: All right, let's keep rolling out the next risk here. Uncompensated risk, which is a different type of risk. So it is the risk specific to an individual company or sector or country. So you don't get a higher expected return for having that concentrated — call it a bet.

[0:24:59.0] BF: It is like the difference between loading up on small cap value over the entire market, you have a higher expected return. Loading up on technology stocks, you don't have a higher expected return. You are taking on uncompensated risk. You may get a good outcome, you may not. But there is no reason to expect that you will.

[0:25:13.8] CP: Right, if you can't live with that down side a rational person said you wouldn't got for the upside. Like it starts to blow up your plan because of some unexpected downside and we have seen both. We have seen lots of great upside but we have also seen catastrophic downside too, over the years.

[0:25:28.2] BF: For sure, uncompensated risk, I mean it is a choice at the end of the day and also if somebody asked me a question again by email that was really interesting and asking if you are introducing any uncompensated risk by adding in factors like the knee-jerk reaction is no you're not. But I started thinking more about it and whether you're adding uncompensated risk or not, depends on the model of market equilibrium that they are using to think about risk.

[0:25:54.2] CP: Okay everyone is collectively scratching their heads. What did he just say? Let's rewind the tape.

[0:26:00.0] BF: It is like if they are using the Fama French Five-Factor Model as your market of model equally – so the model of equilibrium means how does the market price assets in a normal state? So if the market is efficient, what risks are being priced in to stock prices? So with of the Fama French Five-Factor Model we know what their market size, value, profitability and investment. So if you're looking at the market from that perspective and you add in additional small cap stocks that is not adding in uncompensated risk. It is adding in priced risk.

But if you chose to use a different factor model to look at the market like the MSCI has a whole different set of factors that they have developed. I think they're silly. But if you look at the market from the perspective of that being market equilibrium then maybe adding in profitability, whereas MSCI defines that sort of type of factor as quality and it is a different metric. So if you load up on highly profitable stocks when the MSCI model is saying quality is the priced risk, then you are adding some uncompensated risk.

[0:26:58.9] CP: A little technical but I agree for the average investor, uncompensated risk would be largely single security risk.

[0:27:06.5] BF: Single security risk. I think single sector risk is a big one too. I know a lot of people that go all in on tech or something like that, going all in on REITs, which we talked about in the previous episode.

[0:27:15.4] CP: The big risk to all of this is the follow on risk. You get it right at least over confidence which will lead you to making further bets and these bets taking up a larger part of your portfolio going —

[0:27:25.3] BF: And not understanding why you got that outcome. You get a good outcome from uncompensated risk, why did that happen?

[0:27:30.9] CP: Well let's get back to who is it that talked about one of Shane [inaudible] interviews, talk about the decision law or decision journal write down, if you did write down every stock choice you made, what are the reasons why is to go see the movie plays out and see if it was your reasons that explained what happened. I know people embrace to do is play theoretical but reasons change depending on the outcome goes.

[0:27:52.3] BF: But comes back to theory, right? It is like you might get it right for the reasons that you thought were the right reasons. But if those reasons they don't have a theoretical basis then how can you say that it was the right decision?

You can't really. But most people don't have that theoretical framework.

[0:28:04.3] CP: Two more risks. Skewness.

[0:28:05.7] BF: So it is like uncompensated risk in a way. They are definitely related but we already talked about the dead on, the 1.3% of stocks driving the markets returns and we've always known stock returns have a big positive skew that papered global stocks outperform US treasury bills really defined how extreme that skew is.

But it is basically like in stocks you've got more negative returns than positive returns but the far right tail of the positive returns are extreme enough. That the average – well it is just the skew, you don't have a normal distribution. You have more negative outcomes and less positive outcomes but the positive outcomes are more extreme.

[0:28:40.9] CP: It causes a skew in the curve.

[0:28:42.4] BF: Causes a skew in the curve. All of the risks that we have talked about so far except for volatility but total loss, uncompensated risk, skewness, those can all be addressed with proper diversification. Like that's easy.

[0:28:55.2] CP: And the last risk is inflation, which is the one risk as to why you're taking on all of these other risks, to try to beat inflation and one of the best stories I ever saw on inflation, I know we have a lot of advisers that listen to this maybe before your time but Nick Murray was a consultant in our industry is to hold up a card showing a postage stamp.

I haven't bought a stamp in five years so I have no idea how much they even are now but he held up this thing showing a stamp way back when it was four cents. And now they're — whatever it was 50 or 60 cents for a stamp saying that is your perfect illustration that everyone can relate to, of inflation.

[0:29:30.6] BF: Yeah it is interesting.

[0:29:31.7] CP: That is the big risk. A lot of people would say there is no risk in holding bonds but in reality is bonds are the poorest in beating inflation.

[0:29:38.8] BF: Well the thing that you said when we started this segment was how do you – we were going to reframe how to think of our risk and that this is a big piece of that. So I think to think about risk, we have to think about why are we investing in the first place and for most people it is to facilitate future consumption.

You are investing today so you can spend money in the future and the money will grow sufficiently to cover your future consumption needs. But from that perspective like all of the risk we have talked about so far, total loss, easy diversification, volatility, not really a risk.

[0:30:10.5] CP: But just learn how to embrace it.

[0:30:12.2] BF: Yup, uncompensated risk, diversified away, skewness diversified away. Inflation, though the best way to battle inflation is stocks. Stocks aren't necessarily an inflation hedge in the sense that

when inflation is high stock returns aren't necessarily going to be high. But over the long term, the equity premium should be sufficient to beat inflation. It is harder to say the same thing with bonds.

So I actually think for a long term investor and this is something that I talk about with clients fairly often.

I think that for a long term investor there is a pretty strong argument to make bonds are substantially riskier than stocks.

[0:30:51.0] CP: In general or now specific?

[0:30:52.5] BF: Not now specific, in general. Your chances of being unable to meet your future consumption needs by investing in bonds are much greater than investing in stocks because of the higher expected returns of stocks.

[0:31:04.2] CP: So do you make a case that is even more so now because we have gone through a generation of interest rates falling, which skews past returns on bonds. Interest rates fall, bond prices rise. We've had great returns on bonds over the past 30 years.

[0:31:18.4] BF: We've also had low inflation. So I think that thinking of risk in the perspective of the future consumption, for an investor who has a long time horizon and a stable income and is comfortable with volatility I think that is a really strong argument that one of the biggest risks out there is having a portfolio that is too conservative for the wrong reasons.

[0:31:38.9] CP: Right.

[0:31:39.1] BF: If you view volatility as a risk like an actual risk, then you might have a more conservative portfolio. But if you understand the volatility is not a risk and future consumption is a risk, then your safe feeling portfolio like, you know, your 60-40 portfolio when you're young, I think it is a pretty good argument that that is riskier than being a 100% stocks.

[0:31:57.7] CP: But if we go back to Larry Swedroe's framework, which is the amount of risk you take on is your ability, willingness and need to take on risk, if someone has a very low willingness, just know that

ahead of time that you are a 80% bond, 20% stock kind of investor, make sure you do your planning appropriately so you know you are saving enough that is a preference, right?

[0:32:16.4] BF: That's fair.

[0:32:16.8] CP: We have some clients that don't want any equity exposure but they have done their planning appropriately.

[0:32:22.5] BF: It is just that conversation about what is risk like when you say, "I am risk averse so I want to be an 80-20 investor," what risk are you averse to? Are you averse to volatility? Because that is not really a risk and maybe that is a conversation.

[0:32:34.3] CP: The ones that I am thinking of they are averse to just when markets do bounce around, they just don't like that stress in their lives.

[0:32:40.2] BF: That is volatility for sure. Behaviorally that can be a real risk and we have chatted about that. I think that whole discussion about what is risk over the long term is an important one to have.

[0:32:48.1] CP: Okay let us move on to their planning topic of the week, which is annuities. This goes back to stimulator I think by our conversation with Alexandra McQueen, it was three weeks or five weeks ago, which was a fabulous interview if you haven't listened to it go back and check that one out and she'd talked to us about product allocation specifically about how annuities might fit in to our retirement portfolio and the amazing thing about annuities is that one is that it protects you against the risk of living long time, so longevity risk.

[0:33:14.9] BF: It's insurance, it is longevity insurance. If you live to be a 115 but you planned to live to be 95, then that is a substantial risk.

[0:33:21.6] CP: So the example I heard on that, I don't know if I mentioned this two weeks ago in the podcast or not but I knew something that Alexandra retweeted, which was for this example someone had a 6% chance of someone living beyond 95 and I know anecdotally most will say, "I will never live to 95. I am not worried about it." Yeah but if I told you that flight you're about to take have a 6% chance of

crashing, would you be taking that flight? So same question effectively, if there is a 6% chance, why would you not plan accordingly around that?

[0:33:48.2] BF: Yeah and longevity is something that is a really tricky to protect against as an individual because you have one lifespan and one pool of assets and if you die, that's it. If you live long I mean that is it again, your money might run out but as soon as you buy an annuity you are entering this pool of other people who are going to fall on different places of the distribution of outcomes in terms of life expectancy. So it is like people that die early end up funding the people who live long.

And that mortality pooling is one of the biggest benefits of entering into an annuity contract. So longevity protection is huge and then the other one is sequence of returns, which is to tie back to our conversation of volatility just now. It is like over that 30 year period, you can still have a negative outcome and that is due to sequence of returns having a bunch of bad outcomes in a row. Annuities –

[0:34:35.1] CP: And early in your retirement.

[0:34:36.8] BF: That too yeah.

[0:34:37.5] CP: If you have bad sequence and early, that can hurt.

[0:34:40.9] BF: So annuities address this because you don't have volatility. I mean you get it – with an annuity you get a guaranteed income as long as the insurance company remains solvent, which they have been pretty good at doing over the long term.

[0:34:52.0] CP: So since that call you guys got a hold of some software right? That I know Professor Moshe Milevsky worked on it. Alexandra was involved as well, right?

[0:35:00.0] BF: Yeah.

[0:35:00.4] CP: So he is a finance prof at Schulich School of Business at York University –

[0:35:04.8] BF: And he's written a massive amount of academic papers on product allocation and using annuities for optimal retirement outcomes.

[0:35:11.8] CP: He is certainly I think one of the leaders in the world on this topic.

[0:35:14.9] BF: Yeah he is up there and it is neat that he's Canadian. So they built this tool called PRARI. It is a terrible acronym but it is Product Allocation Optimization tool that uses to caustic modeling based on Milevsky's work but the best way to describe it is that we know like an efficient frontier for portfolios. I think most people are familiar with that idea.

[0:35:36.0] CP: Highest return per unit risk.

[0:35:37.6] BF: That's right. So the PRARI tool spits out sort of an efficient frontier of product allocation.

[0:35:42.9] CP: It is going to be the mix between long term portfolio and annuities and certain things will skew that decision like how much pension you have, how much assets you have, those are the two big ones I think, right?

[0:35:54.3] BF: Yeah, how much you're spending, another big one. The PRARI tool takes the probability distribution of life expectancy into account. So the input of life expectancy actually is not a consideration in the tool because they're modeling the variability of that. So we have been using this PRARI tool as a pilot study to look at actual client situations and see where there might be cases where it could be useful and our sample set is probably not ideal, in general, although we are going to think about it in a different way, which I will talk about in a second.

But as a generalization, annuities are really nice in terms of being optimal when you're in a situation where you don't quite have enough money to achieve your goal.

[0:36:36.3] CP: It is like almost the ultimate rational decision to be made because you're taking all biases about where the market is going to go off the table, how long are you going to live off the table and saying, "Okay computer model, go and tell me what the best product mix is."

[0:36:50.2] BF: Yes.

[0:36:51.2] CP: Because when it comes time as we said to do an annuity it is hard to let go of the check because your money is gone.

[0:36:56.5] BF: And it is because you don't know where you are going to land on that probability of distribution of life expectancy outcomes.

[0:37:00.9] CP: But it is where you get emotions on one side and you know you wanted to maximize utility, maximize consumption but there is that 6% chance of whatever that you live a long, long time. A rational person will say, to protect myself against that.

[0:37:13.5] BF: But the fascinating thing is that even without that, even if you don't land on that long tail on that side on average, statistically allocating some portion to an annuity as a retiree is optimal. The risk is you land on that shorter side of the distribution. You die early and you end up with less because all the annuity money goes away. Anyway so –

[0:37:32.3] CP: Which is why it works.

[0:37:34.4] BF: Right, so I said that our clients aren't ideal in most cases because they are not in a situation where they don't quite have enough to meet their goal and when you are talking about annuities, you use the RSQ, which stands for the sustainability quotient. Basically how likely are you to run out of money and for an annuity to make a lot of sense you want to be at the 75% chance of ruin. 75% sustainability quotient and adding in annuities might push you up to 85 or 90%.

In most cases, people are at like they got more capital than they are ever going to need, which makes annuities a little bit less obvious in most cases but as we have been looking at these optimizations, one of the things that I have started thinking about is that if you bucket off the amount of capital that you need to fund your future consumption, adding in annuities can still make that bucket optimal.

So if we took the amount of capital that it would be such that they had a 75% sustainability quotient, we could then allocate annuities within that to make the sustainability quotient to higher.

[0:37:34.4] CP: So you have a second bucket that's excess capital.

[0:38:33.7] BF: Exactly. So you can build a bucket of retirement sustainability. That is an allocation of annuities and financial market investments and that becomes the retirement bucket. So it is like we're creating a situation where the annuity does makes sense.

[0:38:46.9] CP: So you have a safer retirement bucket with excess capital in the second bucket.

[0:38:51.1] BF: Exactly and then your second bucket with the excess capital, you can start thinking about taking more risk if you want to.

[0:38:56.6] CP: That is your small cap value portfolio.

[0:38:59.5] BF: You can also start thinking about gifting while you are still alive to kids or to charities and stuff like that. So as much as I said that our clients aren't generally optimal, I think that there still is an interesting argument to make in terms of optimizing for efficiency on the retirement bucket and completely separating that out from whatever you want to call it, legacy bucket maybe. So anyway there is an example that I pulled just to talk through some of the numbers.

If we take a 63 year old who is planning to retire at 67 and they have got $1.25 million in savings and they're expecting $30,000 in CPP and OES starting at age 67. So they are 63 now and retiring at 67, $30,000 in CPP and OES, they want to spend $80,000 and their assumed inflation rate is 4%, which is not difficult. We use 1.6% at the moment. But anyway, this example is 4% plus an additional $10,000 per year for the first five years for, maybe, travel.

[0:39:52.3] CP: And they have no goal to leave a large estate but the goal is to maximize sustainability.

[0:39:57.2] BF: With a relatively small target legacy of $250,000.

[0:40:00.7] CP: So the goals are important, to maximize sustainability.

[0:40:03.6] BF: Super important. So base case, with a 60-40 portfolio —

[0:40:07.1] CP: No annuities.

[0:40:08.0] BF: No annuities. This situation has an 82% RSQ and a 290 $2,000 expected legacy. So in terms of RSQ, we want it to be higher than 82%. I mean it is like your airplane example. Would you get on an airplane with an 18% chance of crashing? Absolutely not, so putting this information to the PRARI tool, it spits out the efficient frontier of product allocations but I pulled the one that I thought that was most compelling.

So they just said allocating 15% to an immediate annuity and increasing the portfolio equity allocation to 80%, so doing those two changes.

[0:40:43.5] CP: This is on current pricing annuities, obviously?

[0:40:46.5] BF: This is actually from a white paper from Kenics so it would have been pricing at that time.

[0:40:50.0] CP: So 15% goes to an immediate annuity and then you're increasing the asset mix from 60-40 to 80-20 by the amount that is left over that is 85%.

[0:40:57.7] BF: So the sustainability goes from 82% to 89%.

[0:41:03.3] CP: It's wild, eh?

[0:41:03.9] BF: A reasonably big jump but the craziest part is you assume allocating to annuities that you are going to have less capital left over but because of the increase and equity exposure, the expected legacy actually increased in the example from 292,000 to 351,000. So you are getting higher sustainability quotient and a higher expected legacy, which is why Milevsky is so fired up about this whole concept and it is the whole argument about efficiency.

[0:41:27.0] CP: Well that is the argument right there in one paragraph.

[0:41:28.2] BF: So looking at this, overall, if you think about the annuities that as fixed income you do end up with a slightly more aggressive portfolio like it is 68% equity but I think there is also a pretty good argument that the annuities are safer than bots. So you do end up with a bit more equity exposure but you also end up with a safer more guaranteed fixed income component.

[0:41:49.1] CP: Super cool.

[0:41:50.2] BF: So anyway that is just one little case that I pulled out of a white paper they had done, that have mirrored the cases that we've been looking at in real life. So anyway, this is an ongoing area of research for us but it is as compelling as Alexandra made it sound.

[0:42:00.3] CP: I totally agree. Okay, let's go on to the last topic, last week's worst advice. So this on has got a ton of press conference coverage and media coverage and Twitter coverage, the whole thing about free trading in the US. So Schwab went first and they drop their trade fees from 4.95 a trade on a stock ETF or an option trade, down to zero and then quickly TD Ameritrade and I think others in the industry. So basically trading for individuals, the cost is now gone.

[0:42:29.5] BF: And you pulled some great stats from an article that you found. So for Schwab, their trade revenue was three to four percent of revenue. A relatively small drop in the bucket.

[0:42:38.6] CP: Well it is still a $100 million a quarter.

[0:42:40.2] BF: Okay.

[0:42:41.7] CP: But they have AUM of, assets under management, of $3.7 trillion at Schwab. So I mean it is a big number per quarter but yes, it is not a huge percentage of the revenue but still that revenue is gone and I would argue 4.95 really going to zero, is this really a good thing? Do you really care about five bucks a trade?

[0:42:58.4] BF: People do care about it but I don't know if it incentivizes the right behavior. Because now people feel more comfortable trading and we know people from past studies that we have looked at,

people generally take bets that are too risky and they generally overtrade in their individual brokerage accounts.

[0:43:13.3] CP: I got a total kick out of a TD Ameritrade quotes that came after they dropped their fees. They oversee $1.3 trillion so TD Ameritrade is a huge online broker in the US. The quote is, "We firmly believe in investing as a pathway to a better life and are fully committed to providing more people with the access, education and helping you to confidently navigate and building more sustainable financial future for themselves and their families."

Beautiful but dropping your trade fees is going to do that and there is no link between lower fees and more trading activity and the evidence on the online trading is terrible. But next quote, "The company has been building up as investor education offerings in the past year." She said, "Adding relevant information delivered when our clients could best use it and in the formats they prefer increases confidence and empowers rational decision making."

[0:43:57.7] BF: It all depends on your definition of rationality I guess. If trading stocks because of the Trump tweet is rational then maybe they're doing a great job.

[0:44:04.7] CP: So the question is these firms are public. They got to make their money. I think everyone knows they are going to make some whereas the question is how, will firms make up this lost revenue? Like nothing is for free.

[0:44:16.6] BF: Well I mean the answer is somewhere and that's all that matters.

[0:44:19.7] CP: The answer is somewhere. So I was at a conference this week and we are talking about this and this person said it is all in the cash. Where is the cash? So I dug up an article of Jason Zweig put, wrote in the Wall Street Journal March of last year and he had done some research. Things may have changed but the point is there is return to be made on cash balances in which in the online world are historically known to be high. A lot of online traders leave a lot of cash in their portfolios.

[0:44:44.1] BF: Leave cash in the portfolios but the point of the article is that the brokers that are charging now fees are paying tiny interest rates on cash balances.

[0:44:51.5] CP: Yeah, they do what is called sweeping. So a bunch of firms swept money from money market funds, which is where you're invested in in the money market fund or a product with another company inside that brokerage. So we do this all the time with high interest savings accounts, which are issued by a number of different firms inside the portfolios here. So there is no large cash available for the brokers to make the spread on. But there is some huge numbers.

[0:45:16.8] BF: Sorry, when you are saying they did a sweep, they took the money out of money market and put it into cash balances there?

[0:45:20.7] CP: Yeah, it is a mandatory sweep, yes. The article is about sweeping, "Highlighting how firms sweep billions of dollars from money market funds into, quote, lower yielding banks sweeps."

[0:45:29.2] BF: So the answer is where is the revenue coming from. Their earnings spreads on cash balances and then the other one and not necessarily about these guys and I doubt that they are doing this but [inaudible], which is the one that is made lots of noise about free trading in the US and they're arguably the ones that drove this whole change they are making money through order routing.

So they are sending all of their trades through high frequency traders. Which they're again getting comped on but then you are not necessarily getting the best execution as the person placing the "free" trade.

[0:45:58.3] CP: But guess some of these numbers from this article, this goes back. It is Jason Zweig's article from a year and a half or so ago. So Ameriprise financial at $24 billion in cash and Ameriprise makes 10 times more than customers in the cash balances.

E-trade had 438 billion. E-trade paid 0.1% yield to clients in the prior year. 25%, get this of LPL, which is a big financial enterprise in the US, 25% of LPL's gross profit in a recent quarter was from cash sweeps and was almost as much as LPL's commission and advisory fee combined. It's like Costco. Costco has been selling money at the membership cards and give the product at cost basically. But that is what is going on here. Raymond James had 41 billion in cash sweeps.

[0:46:45.5] BF: Yeah I mean nothing is free. Nothing is free and you know free trading is probably not a good thing, anyway, because people over trade. You pull the chart, I don't know where it is from but the data –

[0:46:55.6] CP: It is Morningstar.

[0:46:56.1] BF: Okay it is from Morningstar, showing the average holding period for a bunch of different ETF's but just to highlight a couple because –

[0:47:03.1] CP: This is current. This is to the end of September 2019 that the last 12 months.

[0:47:06.8] BF: So SPI the, Spider S&P 500 ETF, average holding period 15.6 days.

[0:47:12.7] CP: This is a $262 billion ETF.

[0:47:17.1] BF: Crazy. I did think that the one for VTI was interesting. So Vanguard Total Stock Market, almost a year average holding period 329 days.

[0:47:24.8] CP: Yeah and it is a big fund as well, 109 billion.

[0:47:28.5] BF: Anyway, the point is people over trade. Free trades probably don't help that and free trades probably aren't free anyway.

[0:47:33.0] CP: Nothing is for free. Anything else?

[0:47:35.3] BF: That's it.

[0:47:35.7] CP: This is a good episode. A little bit long, we apologize. But I think there is a lot of good information and thanks for listening.

[END]

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